Sodium Nickel Technology for Energy Storage Application:
SoNick Cabinet 620 V 90 kWh

GridEdge solution for Community and Industrial Applications

**Cabinet System**
- 620 VDC Battery System for Energy Storage
- Suitable for On-Grid and Off-Grid applications as well as Micro-Grid
- Solution up to 4 ST523 battery modules
- 100% maintenance free in operation
- System does not need to shut down to replace energy modules (increased uptime, system remains in operation)

**Application**
- Load Levelling
- Power Quality
- Renewable Resource Optimization
- Utility Grid Ancillary Services

**Energy Spring 164 Benefits**

**SAFETY**
- Zero ambient emission
- No hazardous components
- Redundant safety features (chemistry, cell, battery module and BMS)

**MODULARITY**
- Scalable with parallel operation (up to 6 cabinets or 24 battery modules)
- Compact footprint: high energy density and design
- Compatible with DC power supply and bidirectional inverters
- Front side access to batteries

**FLEXIBILITY OF INSTALLATION**
- Indoor installation
- Range of operating temperature in standard conditions: -20°C to 60°C

**Applicable Standards**
- CEI EN 61000-6-2
- CEI EN 61000-6-4
- CEI 64-8
- IEC EN 61439-1
- IEC EN 61439-2
- Non-Environmental Constraints according to 2012/18/EU

**FIAMM Manufacturing**
- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System

**SoNick™ Technology Overview**
- Long-term safety and reliability with over 15 years of field deployment
- Multipurpose application: EV, T/LC, UPS, Railway
- Over 100MWh installed globally
- No auxiliary equipment (air conditioning, generator) needed
## Cabinet Technical Specification for configuration of 4 ST523

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery / Chemistry Type</td>
<td>NaNiCl&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td>Constant Power Discharge (Rated)</td>
<td>25 kW for 3 hours</td>
</tr>
<tr>
<td>Nominal Energy Capacity</td>
<td>90 kWh (100% DOD)</td>
</tr>
<tr>
<td>System Rating (Voltage, Current Capacity)</td>
<td>Nom. 620 VDC, Nom. 152 Ah</td>
</tr>
<tr>
<td>Min / Max Operative System Voltages</td>
<td>500 VDC / 700 VDC</td>
</tr>
<tr>
<td>Standard Charge / Discharge hours</td>
<td>8 hours of charge, 3 hours of discharge</td>
</tr>
<tr>
<td>Standard Circuit Design</td>
<td>Up to 4 ST523 battery modules in parallel per Cabinet</td>
</tr>
<tr>
<td></td>
<td>Up to 6 Cabinet in parallel (No. 24 FIAMM ST523 battery modules with one Gateway for communication)</td>
</tr>
<tr>
<td>Enclosure Dimensions</td>
<td>L: 1200 mm</td>
</tr>
<tr>
<td></td>
<td>H: 2300 mm</td>
</tr>
<tr>
<td></td>
<td>W: 1200 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1500 kg</td>
</tr>
<tr>
<td>Heater Consumption during floating</td>
<td>&lt;700 Wh</td>
</tr>
<tr>
<td>Ventilation</td>
<td>Not need Air Conditioning, only forced-air ventilation for power electronics</td>
</tr>
<tr>
<td>Design Cycle Life</td>
<td>4500 Cycles at 80% DOD</td>
</tr>
<tr>
<td>Product / Material Specifications</td>
<td>Please refer to ST523 battery specifications</td>
</tr>
<tr>
<td>BMS Characteristics</td>
<td>Please refer to ST523 battery specifications</td>
</tr>
</tbody>
</table>

### Front View

![Front View](image1.png)

### Top View

![Top View](image2.png)